Human Tails. See page 363.

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HEALTH

A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

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Lie in three words, HEALTH, PEACE, and COMPETENCE."—*Pope.*

EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

VOL. XIII.—No. 335. FRIDAY, SEPTEMBER 6, 1889. [PRICE TWOPENCE.

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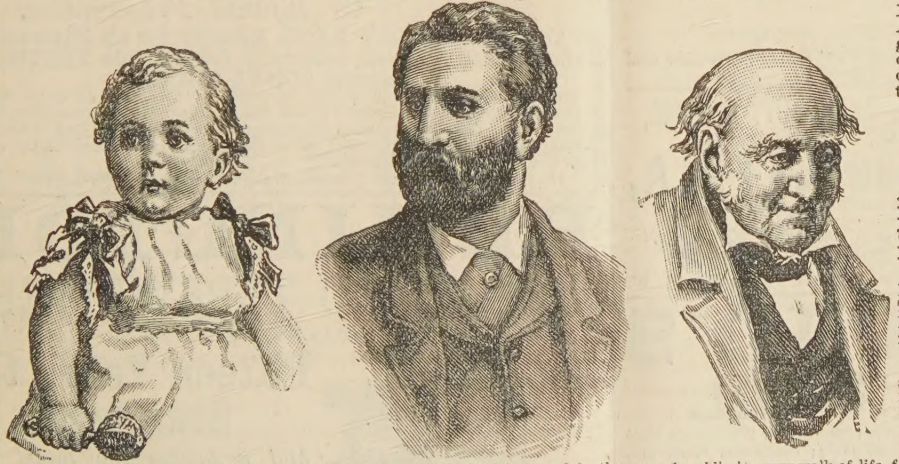

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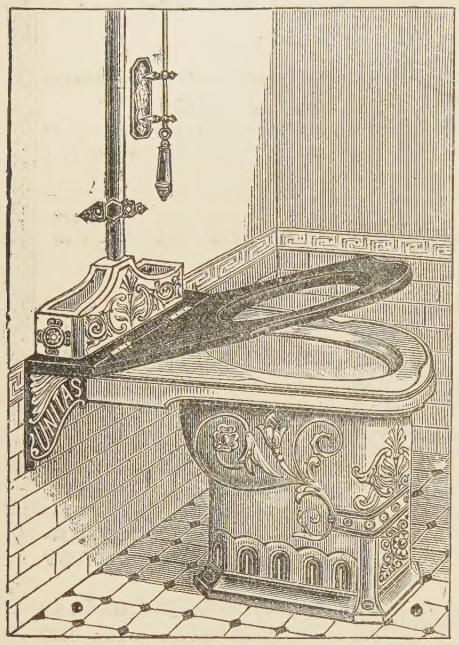

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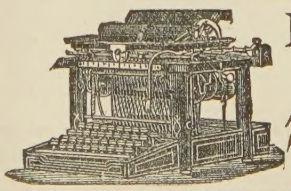

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, SEPTEMBER* 6, 1889.

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Notes by the Way

By the Editor.

"Health is the foundation of all our physical happiness."—*Herder.*

Speaking of identification by thumb-marks, a writer says that Mr. Francis Galton has secured the impressions in printer's ink of the two thumbs of many hundred persons, in order to determine the possibility of using that method in identification. He says that a minute investigation of thumb or finger marks shows an extraordinary difference in small though perfectly distinct peculiarities. Neither is there any room for doubt that these peculiarities are persistent throughout life. This method of testing identity would be valuable in many cases. A writer in the *British North Borneo Herald*, commenting on a lecture by Mr. Galton on this subject, has spoken of the great difficulty of identifying coolies either by their photographs or measurements, and said that the question how this could best be done would probably become important in the early future of British North Borneo.

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Mr. Galton believes also that the difficulty of identifying pensioners and annuitants has led to the loss of large sums of money annually. A method of taking the impressions which he has used with good success is as follows:—A copper plate is smoothly covered with a very thin layer of printer's ink, by means of a printer's roller. When the thumb is pressed upon the inked plate, no ink penetrates into the delicate furrows of the skin; the ridges only are inked, and these leave their impression when the thumb is pressed on paper. Turpentine readily removes the ink from the skin. A simpler process is to slightly smoke a piece of smooth metal or glass, press the thumb upon it, and then make the imprint on a bit of gummed paper that is slightly dampened. The impression is a particularly good one, and is durable enough for the purpose.

✣ ✣ ✣

Dr. Terc, of Vienna, has found a cure for rheumatism in bee-stingings. Having found that every stinging is followed by a swelling up to a point when the body seems to have become hardened against further effect, he tried the stingings on a rheumatic patient. Upon saturating the patient's system with the bee-poison the rheumatism disappeared—not to return for a long time. Dr. Terc has applied his remedy in 175 cases, and has inflicted 39,000 stingings; and now keeps a colony of bees on his premises to be employed in this work.

✣ ✣ ✣

A recent issue of the French *Journal Officiel* contains the report of the committee for sea-fisheries in France on the subject of poisoning through the eating of mussels. The committee, in the first place, recognize that the oysters which cause poisoning are those which have become stale, or have been kept in water rendered foul by decomposed organic matter, and question whether the same may not be the case with regard to mussels. Various explanations of mussel-poisoning were made to the committee. By some it was attributed to a parasite crab (*Pinnotheres pisum*). This explanation, however, was unsatisfactory, for in the United States this *Pinnotheres* is sought after as food. By others the presence of the poison was attributed to the spawn of star-fish, and also to copper absorbed from wrecks. Both these suggestions were, however, disproved.

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The theory of Orfila, also, that the poisonous action of the mussels in the stomach is the result of imagination, does not find acceptance at the hands of the committee. An authority on the subject has found that the mussels lose their poisonous property if cooked for a period of ten minutes with carbonate of soda. The committee conclude that the poisonous nature of the mussels is due to the presence in them, especially in the liver, of a volatile organic alkaloid (*mytilotoxine de Brieger*), developed under the influence of a particular microbe which is only

CANCEROUS DISEASES.

TESTIMONIALS.

The following is from Dr. John Sheerer, St. Albans, Sept. 5th, 1888.

Mr. John M. Young, *Manager Missisquoi Mineral Springs.*

Dear Sir,—My mother, Mrs. Susan Sheerer, of Virgil, Cortland County, N.Y., was pronounced by Dr. Brunson, of said town, to have had a cancer in her breast in 1866. She used two cases of Missisquoi Water, and was cured. She is now eighty-two years old, and in splendid health. Yours truly,

John Sheerer.

MISSISQUOI SPRINGS.

[An Extract from "The Monthly Homœopathic Review," May 1st, 1870.]

By Dr. TUTHILL MASSY.

The Missisquoi Springs of Franklin, County Vermont, are at present rather frequently prescribed in England for diseases where the knife was the severe medicine of other days: I therefore deem it my duty to lay before your readers the experience which I have gathered relative to these Springs.

* * * * * * * *

The Spring A, Missisquoi Springs, is the one most generally exported, and which I have frequently prescribed. It gave great comfort to a lady who was suffered from a large open cancer in the right breast; cleansed the surface, relieved the pain, induced sleep, and diminished the tendency to bleeding, when applied externally, like simple water dressing, and taken in half-tumbler doses twice a day.

The benefits of the Spring A were very remarkable in a lady burdened with an ovarian tumour containing much water, with considerable abdominal tenderness. A few bottles always reduced her great size, and relieved her mind from the dread of an operation which was once proposed.

PAMPHLET on application to the Sole Importers—

INGRAM & ROYLE, 52, FARRINGDON-STREET, LONDON, E.C.

AND OF ALL CHEMISTS.

found in mussels living in stagnant and polluted waters. Finally, they advocate the removal of all restrictions on mussels in artificial beds, and recommend the sale at all times, at fish-markets, of mussels coming from such beds, which are usually situated in favourable localities—a sale which is at present prohibited in France during May and June.

✣ ✣ ✣

A GOOD ink-eraser is always a desideratum of the household. If the ink is an iron one, the following plan may be tried:—Moisten the spot—on paper, linen, or other surface—with a little water, and pile upon it a pinch of a powdered mixture of equal parts of oxalic and citric acids. Allow this to remain for some time. The powder should be in sufficient quantity, so as not to completely dissolve, should be distinctly wet, and cover the spot as well as a little distance beyond it. After fifteen to thirty minutes the spot may be carefully cleansed with water. In the case of paper, care must be taken not to tear or otherwise injure the paper.

✣ ✣ ✣

IN the pages of HEALTH I have invariably lifted up my voice energetically against the abuse of tea-drinking, and against the ignorance which induces people regarding tea as a food. But I have also been careful to point out that tea has qualities which entitle it to rank as a valuable adjunct to food, and as an agent which diminishes the bodily wear and tear, and thus aids our nutriment in fully discharging its functions. In order, however, to obtain the full benefit of tea, I am reminded that we must drink a pure infusion of good strength and aroma, and one easily "brewed," so that it parts with its principles before much or any of the tannin it contains can pass into the infusion. These points constitute, I believe, the crucial tests of a pure and good tea, such as persons of feeble digestion may imbibe without running any risk of increasing or favouring indigestion.

✣ ✣ ✣

RECENTLY I have been tempted to give a trial to the Mazawattee Ceylon Teas, imported and sold by the Company of that name of Eastcheap-buildings, Eastcheap, London, E.C. These teas, certified as regards their purity, and the small amount of tannin they contain, as well as regards the high proportion and quality of their *theine* (the active principle of all teas) by Dr. W. Emmerson, public analyst for the county of Leicester, &c., really fulfil all the conditions above noted as distinguishing the genuine article. Their aroma is excellent and pleasant, they infuse readily, and there is no bitterness or astringency in their taste. That these teas are most suitable for invalids there can be no question, and the Ceylon brands sold by the Mazawattee Company should, if merit alone has its due, take a first rank among the products of the East. I know of no more pleasant or really dietetic teas than those of the Mazawattee brand, and those of my readers who may be in search of means for producing "the cup that cheers but not inebriates" in typical perfection, should certainly give these teas a fair and unprejudiced trial.

✣ ✣ ✣

THE German War Minister has decided that the chest of every soldier shall be examined once a month. If the chest does not reach certain breadth and does not develop with drill and athletic exercises, the soldier will be disqualified and regarded as being predisposed to consumption, and, moreover, likely to infect his comrades.

Original Essays

"Life is not to live, but to be well."—*Martial.*

MORE ABOUT FRESH AIR.

BY ALIQUIS.

I PURPOSELY choose this subject for discussion because it invests and concerns us all. It is the substance in which we live, move, and have our being; and that being so, no apology or introduction is needed for this little dissertation on it. Pure air is as indispensable for our health as good food. Indeed it is more so, inasmuch as some chemical change must take place in the articles that enter the stomach ere they are absorbed by the system, and this change is brought about by the elements that constitute the air, or in other words, by the atmosphere that surrounds us. The oxygen of the blood, in short, combines with the carbon, nitrogen, and hydrogen that are in the food, and the compounds that result from this combination remain for a time, at least, in the body, and form part of its substance. Other parts or results of this combination are thrown out, and these befoul and deteriorate the atmosphere. They are technically called excreta, and are the substances that particularly need to be guarded against or neutralized.

This will be more obvious to the reader when he is told that every act or thought of his is accompanied by a consumption of oxygen and a proportionate deterioration of the surrounding air. It thus behoves every one to look well to his own individual surroundings, and see that they are always pure. To enforce the truth of this principle, and bring home to the reader's consciousness the fact that life cannot long be maintained in foul air, is the object of this little essay.

As one fact they say is better than a bushel of theories, I will give an illustration or two in proof of this, and leave my reader to his own cogitations anent it. I must for this purpose remind him of the awful results, if he has not already heard of them, that followed the incarceration of some 146 of our countrymen in the Black Hole of Calcutta on the night of June 21st, 1756. On this night, in the sultriest period of a sultry season—and the weather is always very hot about this time in Lower Bengal—one hundred and forty-six human beings, the vast majority of them being Europeans, were crammed together by order of the Soubadar of Bengal into a room that was only eighteen feet by fourteen in size. This was enclosed on three sides by a dead wall, while the two small windows it contained were barred with iron, and were further interfered with by a low, overhanging verandah. What happened? you will ask. Let Mr. Holwell, one of the survivors, tell. Describing the event, he says that "they [the prisoners] had been but a few minutes confined before every one fell into a perspiration so profuse that no idea can be formed of it." This brought on a raging thirst, which increased in proportion as the body was drained of its own moisture. . . . Every man was stripped, and every hat put in motion. They several times sat down on their hams, but at each time several of the creatures were suffocated or trodden to death." This went on for some time longer, the guards being meanwhile frequently taunted with opprobrious epithets by the prisoners in their desperation to induce them to fire, and "water, water," soon became, as we might expect, the general cry.

"Before eleven o'clock most of the gentlemen were dead, and by midnight half the survivors were delirious,

but instead of crying 'water, water,' as above, 'air, air,' was now the universal cry. About two o'clock in the morning they crowded so much to the windows that many died standing, and when the day broke the stench arising from the dead bodies in that dreadful stew-pan was insufferable. Finally, when 'near six,' an order came for their release—only twenty-three persons came out alive, and of these several were soon afterwards carried off in a high putrid fever." The curious reader who wishes for further information on the point may find the same in *Holwell's Indian Tracts* (p. 392), as well as in Pickford's *Hygiene* (pp. 219-22). The subject is also discussed in Orme's *History of Industan* (vol. i., pp. 74-77), and in Thornton's *History of the British Empire in India* (p. 44). It is also alluded to in several other works.

Such is, in brief, the story of this horrible event, and I thus summarize it to show the value, nay, the absolute necessity, of pure air. The reader will notice that the first symptom of distress was a profuse perspiration, and that the consequence of this was a cruel and insatiable thirst. This is in a lesser degree what most new arrivals feel in the hot season in the East. Perhaps the best substitute for water in these cases is cold tea. But these poor unfortunates had no such substitute. The reader will observe that the cry for "water" was soon replaced or superseded by that for air. He will also observe that the bodies rapidly decomposed, and that several of the survivors rapidly succumbed to putrid fevers. This is just what one might expect under the circumstances, for these poor fellows, deprived of fresh air, rapidly consumed what remained of their prison's former scanty supply, or converted it by their tainted breath into a veritable poison. In other words, they were suffocated by the stifling heat as well as by the exhalations that emanated from their own bodies, and in either case foul air was the cause of the mischief. It is also the cause of equal mischief nearer home, and the historian, Lecky, mentions an occurrence in point.

Enumerating the outrages that were perpetrated with impunity in the streets of London about the year 1712, and after glancing at the age and inefficiency of the watchmen of the period, he says, that "of these an opinion may be formed from an incident related by Horace Walpole in 1742:—A parcel of drunken constables took it into their heads to put the laws in execution against disorderly persons, and so took up every woman they met till they had collected five or six and twenty, all of whom they thrust into St. Martin's Round House, where they kept them all night with doors and windows closed. The poor creatures, who could not stir or breathe, screamed as long as they had any breath left, begging at least for water . . . but in vain. . . . In the morning four were found stifled to death, two died soon after, and a dozen more were in a shocking state." Many diseases, such as diphtheria, typhus, erysipelas, are now traced to the agency of foul or tainted air; and if these examples do not suffice others of equal cogency can be given.

Such, in a word, is the efficacy of the fresh as compared with the foul article, that most sanitarians now advocate the treatment of those who are thus affected in the open air or in huts in preference to hospitals or houses of any kind. House-boats on the Thames or tents in India are equally conducive to health, and a similar experience was acquired in, or enforced by, the Franco-German and other European wars. It was also found during the famine of '48 in Ireland (as any one may see in *Carlton's Tales*, vol. i., p. 207), that those who were stricken down by the terrible spotted fever of those days recovered better and sooner in wattle huts by the wayside than those who,

"Long in populous cities pent,"

were sent to workhouse or other infirmaries. The famine-stricken inhabitants of Madras were equally benefited by the exposure; and our sick in Egypt were treated successfully in this way. Dr. Mouat found that "the most healthy Indian barracks he had seen were a collection of straggling wooden huts or barns raised some feet above the ground, which had shingle roofs, near Moulmein;" and the evidence derivable from the mortality of our own foot-guards is equally conclusive. The late Mr. Trollope testifies that that portion of the great American army that was in the field was healthier than its other portion that lay in barracks; and the Shakers assured Mr. Dixon that "fresh air was their medicine. We have only had one case of fever [said they] in thirty-six years, and we are much ashamed of ourselves for having to acknowledge that it was entirely our own fault."

A few further illustrations will perhaps better enable us to realize the importance of these statements than any words I could employ. Thus speaking of the Newfoundland fishermen, who are, as can be easily imagined, much exposed to inclemencies of weather through their icy ocean and bleak, stormy climate, Bayard Taylor says (*At Home and Abroad*, p. 273) that "no race of people that I have ever seen shows more vigorous stamina, and the natural morality which accompanies that condition." And the reason of this lies, he adds, in the fact "that they are nourished by the pure, vital blood unmixed with any of those morbid elements which too often poison the life of our physically and spiritually intemperate people of America." Mr. Wild gave a very similar description in *Two Months in the Highlands*, p. 37, of the Wick fishermen on the north coast of Scotland, who are equally exposed; and Colonel Gordon noticed (*The Roof of the World*, p. 22) that the Ladakis who accompanied the English Embassy to Yark, and "carried a weight of nearly eighty pounds each for eleven days," and that so laden they made an average daily journey of fourteen miles. These men live chiefly in the open air, and eat little or no meat, and the reason why they are so stout is that the atmosphere they inhale is probably the purest in the world.

An Irish historian is responsible for the following, and I relate it purposely to enable my readers to see and appreciate the reasons why medical men attach so much importance to fresh air. Describing events in the life of Dr. Lyne, who died at the ripe age of eighty-five of the small-pox, the author of *The History of the City and County of Cork* (vol. ii., pp. 432-33) says that "it was remarkable that for fifty years together nobody died at his house, though he always had a numerous family. His house was built in an odd manner, every window had another opposite to it, none of which he ever suffered to be shut or glazed, but were continually left open without any defence against the weather. The room the doctor slept in had four windows, two open on each side of his bed. Upon his death his sons glazed all the windows, since which time several were buried out of the house." This special immunity may be either an accident or a coincidence; but it is, in either case, a remarkable one. The chief reason for sending weak-chested persons to Madeira or the South of France lies in the fact that the climate of these places is milder than that of England. Such persons can also spend more time in the open air in these resorts than they can do here, and the rush that now takes place for Davas and other mountain ranges in Switzerland affords ample evidence of the same beneficial exposure.

On the other hand, beneficial though exposure is, its counterpart, overcrowding, is known to be equally dangerous and demoralizing. I will give an illustration or two in proof of this, and then close this essay. I am indebted for the following to an officer of erstwhile high repute in India. Alluding to the overcrowding which was at one time so common in that country, and which, as he truly observes, soon exhausted any remnant of pure air there may have been previously in such quarters, General Sleeman says (*Rambles and Recollections of a Bengal Officer*, vol. ii., p. 105) that, "In 1817 a flank battalion of 600 European soldiers was formed at Allahabad as an escort to the Governor-General, the Marquis of Hastings. With these 600, there were 32 European officers. The soldiers and the non-commissioned officers were put into barracks in the fort, where they had not sufficient room. The commissioned officers resided in bungalows, in cantonments, or in tents in the open air. The men were effectually prevented from exposing themselves in the sun, and from indulging in any kind of intemperance, and every possible care was taken of them. The commissioned officers lived as they liked, and drove about among their friends and the other residents of the station. A fever soon broke out among the soldiers in the fort, and carried off great numbers of them. Of the 600 only 16 escaped this fever. When too late they were removed from the fort into tents on the plain. From that day the deaths diminished, and the sick began to recover. Of the 32 commissioned officers, only one, I think, was sick at all, and his sickness was of a kind altogether different. It is impossible," he adds, "to resist the conclusion that the non-comissioned officers and soldiers got their disease from want of sufficient room; and, consequently, of want of sufficient pure air to breathe."

Subsequent experience has, he continues, tended to confirm the conclusion that "more Europeans have died from impure air than from all the wars that have been waged within the last twenty-four years;" and what I have quoted from Lecky will serve to show that the same causes are in operation in the very midst of us. There is now scarcely a doubt but that the jail fever that prevailed in this country from the thirteenth to the seventeenth century was due to the same form of overcrowding and its necessary consequence, tainted air; and the like may be said of the Black Death and other forms of plague. So also might it be said of the slave dhows and ships, and the numbers who perished in their fœtid holds, in what was called the middle passage, are almost beyond counting.

From this, the reader will easily see the value of fresh air, and the more he is in it the better it will be for his health and longevity. He may be unable to afford the luxury of a horse, but he can always rely on "shanks' mare," his own stout legs, and the whole matter is so well set forth in Blanchard's song, "There's room enough for all," that I make no apology for reproducing it here, and of commending the spirit of it to my reader:—

"From poisoned air ye breathe in courts
And fever-tainted alleys,
Go forth, and dwell where health resorts
In rural hills and valleys.

"Where every hand that clears a bough
Finds plenty in attendance,
And every furrow of the plough
A step of independence.

"O hasten, then, from poisoned den,
And lodging cramped and small,
The world is wide, and land besides,
There's room enough for all."

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

A WONDERFUL PRODUCT.

THE *Hamamelis Virginica*, or Witch Hazel, from which our wonderful product is obtained, belongs to the natural order *Hamamelacæ*, and is indigenous to the United States. The seeds of this plant are very easily distinguished, being black and glossy externally, and white, oily, and farinaceous internally. They are also edible, are readily partaken of by the Indians, and taste somewhat similar to the hazel nut. The leaves, if chewed, have a bitter, astringent taste in the mouth, and the bark, which is also used, will be found somewhat bitter, acrid, and pungent.

This drug has long been in great favour among the Indian tribes inhabiting the backwoods of America, and the medicine man of the camp always places implicit confidence in the efficacy of the plant, whether administered internally or externally. These camp doctors were wont to apply poultices made from the fresh leaves to wounds, bruises, tumours, swellings, ulcers, or other painful disorders, and in cases of internal pain or bleeding they made infusions from the fresh leaves and young bark of this same plant, which they administered to the sufferers with beneficial results.

Many celebrated men in the medical profession have given this drug their careful consideration. Dr. Marshall, of Philadelphia University, found traces of a volatile oil on examination. Dr. Bennett, Rochester, N.Y., on examination of the leaves, observed their fragrance, and at once attributed the wonderful potency, as believed by the backwoodsmen, to their volatile properties, and he at once set to work to prove his surmises correct. He experimentally distilled the young bark and small twigs with water, with the result that his distillate was found not only to possess all the properties attributed to preparations from the dry leaves, but was superior to these, inasmuch as it contained a large percentage of a volatile oil, of which only traces had been found in the dry preparations. This he so conclusively proved, that now only the fresh young bark and small twigs are used in medicine. The distillate made from the twigs and bark, and which contains all the volatile principles of the plant, is called Hazeline. A ton of bark and twigs, when distilled, yields about twenty gallons of Hazeline.

Hazeline has not only taken a prominent position in the surgery, but has also become a domestic and family medicine, and is now looked upon as a clean, healthy, and potent remedy in many cases. Its sedative cooling action renders it a most important restorative for burns, scalds, and the burning pain in acute eczema and erysipelas. In these affections, however, Hazeline should be applied on Lawton's Absorbent Cotton, which must be kept constantly saturated with it. It has been recommended to rinse the mouth with Hazeline for toothache, and also to continuously apply it to the cheek. Hazeline in combination with Lanoline—the purified fat obtained from sheep's wool, and recently discovered by Professor Liebreich, of Berlin—has been found to be most efficacious in the treatment of piles, the former acting as an astringent, the latter as an emollient to the surface. The Lanoline is also absorbed by the subcutaneous tissues.

Hazeline administered internally in teaspoonful doses, three or four times daily, acts as a splendid and most

useful anti-hæmorrhagic. As an adjunct to the toilet, it is in great demand on account of its cooling and soothing action upon the surface of the skin, and its power to allay any irritation or roughness that may arise.

This, then, is Hazeline; a wonderful, powerful, and, when judiciously used, a harmless product—one that should always be kept in the house ready for any emergency, if not in daily use in connection with the toilet table. Hazeline has been subjected to severe tests, and its utility proved beyond doubt, and the medical profession throughout Great Britain, the Colonies, and the United States speaks of this preparation in the highest terms of praise.

ITCHING OR PRURITUS.

THERE is no more tedious ailment than itching. Sometimes it is produced by the sting of an insect, by a hot sun, by a skin-disease—as eczema or shingles—and sometimes its cause defies detection. Of all forms of itching, none is more obstinate than that known as senile pruritus, which occurs in the old, and frequently endangers life. The Spanish Inquisition used to torture people for reasoning and speaking honestly, among other ways, by tickling the soles of their feet. It is alleged that the good priests thus converted men to maniacs. Nature is no less merciful than the priests, or she would not have produced them.

It is the same with itching as with the priests—it is sometimes as cruel as the Inquisition. A short time ago a consultant of much repute in London was called to see a woman in the agonies of pruritus. She had suffered with it long, and her medical attendants had abandoned all hope of relieving her, and death seemed imminent. He recommended, as a last resource, "Vinolia." Its action was astonishing beyond measure. At once the intolerable itching was assuaged, and she fell into a calm, refreshing sleep. Suffice it to say that the consultant's reputation in the neighbourhood was unequalled after that. The woman recovered.

There is a form of itching peculiar to women alone. It embarrasses, torments, and renders life at times simply intolerable. It may be of years' duration, and there is but one thing which can be relied upon with any degree of certainty to allay the irritation, and that is "Vinolia." It is the most cleanly cream imaginable.

There is another form of pruritus, sometimes accompanied by piles and sometimes not. This has been recently pronounced in the medical journals as the most difficult to control or relieve of all the ordinary ailments of everyday life. In these cases usually the liver has long been out of order, and the interference with the flow of blood through it overcharges the hæmorrhoidal veins, and causes piles and irritation. Here again "Vinolia" acts with perfect efficiency.

The itching so common to skin-diseases is not always subdued without considerable trouble. In eczema, a catarrhal state of the skin with pimples, watery blisters, pus, and scaling, the itching is aggravating beyond measure. The sufferer cannot forbear to scratch, and scratching only makes matters worse. The service of an agent such as that we have mentioned cannot be overestimated in such cases, and frequently it proves absolutely curative.

CHEMICAL ANALYSIS.—DR. DRINKWATER, Lecturer on Chemistry in the Edinburgh Medical School, undertakes the Analysis of Water, Foods, Wall-Papers, and of all other products and articles connected with Household Health and Commercial Interests. Terms on application to Dr. Drinkwater, Chemical Laboratory, 41, Chambers-street, Edinburgh.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

KOUMISS AND KEPHIR.

BY AD. TSCHEPPE, PH.D.

KOUMISS is generally designated as fermented milk. As this term implies the meaning of alcoholic fermentation, the definition is incorrect, since lactic fermentation has as much share in shaping the final result, by acting on both the proteid substances and the sugar, as vinous fermentation does. It is not even the sugar contained in milk which is attacked by the ferment which induces alcoholic fermentation, for the product of its fermentation is furnished by sugar foreign to milk, purposely added to it. Koumiss may, therefore, more properly be defined as being obtained by alcoholic fermentation of sugar, not *of* milk but *in* milk.

The various phases of the process which take place in the formation of koumiss, and the changes which the constituents of milk must undergo, may be thus briefly stated:

Some sugar is added to milk, then brewers' or cake yeast (grocers' yeast), and the mixture is left to itself. In the course of time, varying in length according to temperature, the effects of alcoholic and of lactic fermentation make themselves apparent; the first by evolution of gas, through the splitting up of some of the sugar into alcohol and carbonic acid, of which the latter is the most conspicuous; the lactic fermentation, by the appearance of lactic acid, generated through a rearrangement of the atoms in the sugar-molecule, and in the influence of lactic ferment, which transformation manifests itself by throwing the casein out of solution.

While albumen may be considerably acidulated without losing its solubility, casein as an alkali-proteid, is soluble only in slightly alkaline solutions, and is extremely sensible, in this respect, towards acids. If lactic fermentation is so far progressed that neutrality is passed, the casein is thrown out as a coherent jelly, which when undisturbed, becomes more compact by contraction and expulsion of serum, and finally conglomerates into separate fibrous lumps, which cannot be divided any more. But if this gelatinous precipitate is agitated ever so slightly in the incipient stages of its formation, it is readily broken up into an impalpable cream, which may be kept finely suspended in the liquid for a length of time if the necessary conditions of temperature are observed.

If the generation of carbonic acid gas has been lively enough before the lactic fermentation produces its effects, or if it is aided by occasional shaking of the bottles, all the butter fat is enveloped in the precipitate of the casein without affecting its divisibility. Hence the function of the carbonic acid is this, that, by the expansion and mobility due to its gaseous nature, it reduces the casein to the finest possible condition—much finer than other mechanical means can do. When the precipitation and division of the casein are effected, and enough carbonic acid gas is found to cause lively effervescence, the koumiss is ready for use. The time in which this is accomplished depends on conditions of temperature at which the fermentation takes place, and on the proportions of the additions. Upon the observance of the most favourable conditions depends also the quality of the product, and it is here where the formula and the directions given in the National Formulary need a correction, in order to obtain an irreproachable preparation of koumiss.

1. *Addition of Sugar.* — Milk-sugar is not readily attacked by yeast. Contrary to statements in books that vinous fermentation will set in after the milk turns sour, and that thereby the milk-sugar becomes changed to glucose, I find that milk more easily enters fermentation under addition of an alkali, by which the souring is prevented. The same is the case with cane-sugar; and as it is desirable to have the alcoholic fermentation started before the lactic fermentation acts on the casein, the addition of fermentable sugar, in the shape of grape-sugar or honey, is indicated. Its quantity must be regulated according to requirements only. Nothing is more annoying to the unwary consumer than the opening of an overcharged bottle of koumiss, which generally results in the spattering of its contents promiscuously about the room. The quantities prescribed in the N. F. for two pints of milk is amply sufficient for two gallons, and may only be increased for koumiss dispensed in patent bottles, or if drawn from ordinary bottles by means of a tap.

2. *Temperature.*—The temperature prescribed in the formula may turn out to be disastrous in the manufacture of koumiss.

Milk is a peculiarly complex preparation. It is not an emulsion, as sometimes stated in books, but contains the fat inclosed in separate cells, which rises to the surface as layer of cream if milk is left in undisturbed repose or subjected to centrifugal force. Boiling does not burst these cells or separate the fat; but if milk is left for hours at a temperature above the melting point of butter-fat, 65 degs. F., or if subjected to violent commotion, such as churning at the same temperature for a short time, practically all the fat is separated. Again, if casein is precipitated from fresh milk by means of acids, at any temperature, it encloses all the fat in its meshes, and also the jelliform casein separated from milk by rennet includes the butter firmly. But if milk is allowed to turn sour, the fat separates from the casein readily by keeping it a short time at temperatures above the melt-point of the butter-fat. At the same time the finely divided casein conglomerates into more compact lumps, and the koumiss is spoiled.

Although milk, as long as it is sweet, may be kept at 90 degs. F. with impunity, this same temperature is deleterious to the product after souring sets in. The casein turns lumpy, and the fat may be seen floating in the neck of the bottle as a yellow mass. This temperature is unnecessary for the manufacture of koumiss. Vinous fermentation takes place at much lower temperatures, and the higher degrees only favour the lactic fermentation by which the koumiss gets too acid to be drunk by the bottleful.

The sugar is not all consumed by either kind of fermentation. If milk is allowed to turn sour, only one-tenth to one-eighth part of its sugar is changed to lactic acid, and also the vinous fermentation stops before all the sugar is used up. But the lactic fermentation goes on slowly, acting on the sugar which is left, and the koumiss turns gradually more and more acid the longer it is kept. Pretty old samples of koumiss still react on Fehling's solutions.

In place of preparing koumiss with sweet milk, and waiting until it turns sour, the casein may be precipitated at once, by the addition of one-third of ready koumiss to fresh milk. Yeast is not necessary, but sugar must be added to produce enough carbonic acid gas to cause effervescence.

Koumiss may also be made from sour milk, freed of its crust of cream, by breaking up the gelatinous mass by vigorous concussion, and causing alcoholic fermentation by addition of sugar and yeast. This preparation would be nearly devoid of cream, but a proportion may be brought in by addition of sweet milk.

The time in which koumiss becomes ready for use depends as much on the quantity and activity of the ferment as on the temperature. With plenty of yeast and a prevailing temperature nearer to 90 degs. than 60 degs. F., the course of fermentation may be said to be even stormy, and the process is completed in as many hours as days may be consumed when the temperature is kept lower. But it is safer to operate at a lower temperature, by which a much finer product is obtained. Besides, by a slow after-fermentation, the koumiss becomes ripened, and in the course of one or two weeks a cheesy or butyracous flavour is acquired which is generally regarded as a necessary characteristic of good koumiss.

Commercial preparations of koumiss never correspond to fully undiluted milk. Koumiss made from undiluted milk is too rich and requires too great care to be practicably handled by the large manufacturer. But the pharmacist who disposes of his own production directly to the customer may easily take the necessary precautions against disastrous influences, and may give his customers the benefit of an undiluted preparation, which koumiss is supposed to be.

Samples of commercial preparations of koumiss I found either to be more or less deficient in cream, or to be made from watered milk, or both. Dr. Brush's koumiss, for instance, commanding the largest sale in this city, gave, on analysis, only two-thirds of the casein and fat in the proportions in which they exist in milk, indicating a corresponding watering of the milk.

Kephir is a fermented milk beverage identical with koumiss in its finished state. It differs from the latter by being produced by aid of a different ferment. The kephir ferment was originally brought from the Caucasus, but may be procured in this market from home culture. It comes in the shape of grains of various forms and sizes, very much resembling bits of the inflorescence of cauliflower, constituting a compound fungous growth resulting from the cohabitation of a fleshy fungus with a certain species of *Saccharomyces* (or yeast-plant), which latter alone plays the active *rôle* of enacting vinous fermentation of the saccharine constituent of milk. This peculiar Saccharomyces differs from the brewers' yeast by starting vinous fermentation in milk without addition of a fermentable sugar, and fermentation progresses to a certain advanced degree while the milk is yet sweet, or before lactic fermentation produces its effect. It is, therefore, possible to obtain an effervescing koumiss by its aid with a much less degree of acidity than that obtained by the *Saccharomyces cerevisiæ*, and it may be concluded that kephir yeast is better adapted for the fermentation of milk than beer yeast is. By after-fermentation the same degree of acidity is reached as in koumiss obtained through the action of ordinary yeast. This peculiarity has led to a distinction in the use of the different stages of fermentation of kephir, as it has been observed that young kephir which is yet sweet acts as a slight purgative, while an older, or more acid, or "stronger" kephir exerts a constipating effect on the bowels, and is less easily borne by delicate stomachs.

Kephir koumiss is prepared by adding active kephir grains to milk, preferably kept at a temperature between 70 degs. and 80 degs. F., until the effect of fermentation becomes apparent by the rising of the grains to the surface, being carried upward by bubbles of carbonic acid gas

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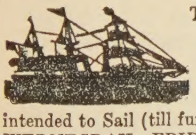

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attached to them. The grains may then be strained off, and the milk, which now contains enough yeast cells to insure the continuance of the fermentation, left to itself in well-corked bottles.

As the yeast cells propagate themselves, more fresh milk may be added previous to bottling.

The directions accompanying the kephir grains direct that the grains should be left in the milk until the casein separates from the serum, and that this strained product shall be used as the ferment of about four times its bulk of fresh milk. (Several prominent houses who sell kephir grains accompany them by printed directions which fail to start their activity altogether.)

If kephir is once obtained by this means, the further production may be simplified in the same manner as in the case of koumiss, by adding a quantity of ready kephir to a multiple of fresh milk, and this may be continued through many generations without having further recourse to the original kephir grains.

The printed directions recommend the employment of milk previously boiled. The advantage of this proceeding is supposed to be this, that the lactic fermentation is retarded, to which end a washing of the kephir grains with a two per-cent. solution of carbonate of sodium is prescribed for the removal of the rest of lactic acid tenaciously retained by the grains.

Commercial kephir grains may be found to be quite inert by the buyer uninitiated in the art of developing them properly. The fact is that their activity must be first started, and directions to do so are given with the samples, but in spite of following them closely, they may fail to give satisfactory results. The secret of success seems to me to be to keep the grains in fresh milk at a temperature of 70 degs. to 80 degs. F., and to change the milk once or twice daily, or as often as the milk threatens to become sour. The time may have to be extended to a week, until their action becomes manifest by the generation of gas.

Kephir grains are also apt to decay, and these inert grains have to be removed. Those which retain their vitality may be recognized by their turgor or toughness to the touch, while the decayed ones crumble between the fingers like soft cheese.

The usefulness of koumiss as a dietetic hinges upon the fine division of its casein. Indeed, if a well-prepared koumiss is subjected to digestive influences, the finely-divided and diffused precipitate of casein dissolves at once, while the floccular casein, otherwise obtained, resists the peptic action remarkably long.

Matzoon is a peculiar milk preparation, also stated on the label to be fermented milk, although there is no evidence of its having undergone alcoholic fermentation. It is devoid of gas, and appears as a viscid liquid, showing a rather coarsely granular mass of precipitated casein, well suspended in a serum which corresponds to that obtained from sour milk. Although betraying great richness from its appearance, the analysis gives amounts of casein as corresponding to undiluted milk and two-thirds of its cream.

1 fl. oz. of cow's milk contains grains (average).	Koumiss from milk.	Dr. Brush's koumiss.	Matzoon.
Sugar.....22	—	—	20
Casein 14	14	10	14
Fat.....15	15	9	7
Lactic acid .....—	1·5	3	·1

Glucose. Lactic Acid. Glucose. Alcohol.

$C_6H_{12}O_6 = 2HC_3H_5O_3$ $C_6H_{12}O_6 = 2C_2H_6O + 2CO_2$

Glucose yields by fermentation: Alcohol, 48·5 per cent.
Carbonic Acid, 46·5 ,, ,,
Glycerine 3·6 ,, ,,
Other products, 1·4 ,, ,,

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE DETERIORATION OF DRINKING-WATER AND ITS DETECTION.

By Surgeon Gilbert Kirker, R.N., M.D.

(Concluded.)

There are, however, the records of several outbreaks of disease on board ship, which appear to point strongly to the deterioration of the drinking-water, and, if medical officers had been aware of the occurrence of such a thing, it is probable there would have been more. With regard to stored shore water, I may refer to the instances of the "Camilla," on the China Station, in 1857, the Detached Squadron, after visiting Vigo in 1873, and the "Ready," on the south-east coast of America, in 1885. These instances present in common the following conditions:—The use of the water was not attended with any disease on shore or on board for some time after its reception; the ships, on going to sea, steered almost straight into lower latitudes and hotter climates; after a short exposure to the elevated temperature the sickness broke out, and the stored water was considered to be the cause. The case of the Detached Squadron is particularly instructive, for to the two ships, the "Doris" and "Narcissus," which alone appear to have kept the water on board for a considerable time, the epidemic of typhoid fever was almost confined.

With regard to condensed water. Some experience in Her Majesty's navy goes to show that it, too, suffers deterioration, and Surgeon Gibbs, of the United States navy, in bringing forward an invention for the aëration of stored condensed water, stated that, in 1873, in the "Richmond" flag-ship, numerous cases of cholera morbus occurred as soon as she reached the warm weather, which could be accounted for in no other way than by the use of condensed water which had lain stagnant in the tanks.

Reasoning *à priori*, deterioration of condensed water is a thing to be expected, for it sometimes obtains putrescible matters from the boilers, and when made from the water of foul harbours it contains much volatile organic matter. I have seen, in water condensed at Brindisi, a large quantity of ammonia, a substance which favours micro-organic growth.

If deterioration renders drinking-water unwholesome, its detection is most important. Hitherto, for the discovery of waters which may be unwholesome by reason of contained organic matter, analysts have mainly relied on determinations of the amount of the organic matter; but a moment's reflection should show that this is a fallacious test, as some of the most wholesome waters are rich in this constituent.

The following method aims at discovering the condition of the organic matter, and not its amount, or, what is much the same thing, the state of the water in reference to micro-organic life, which, as has already been shown, when extreme and abnormal, constitutes deterioration:

1. When deterioration is in the early active stage, the water is often hazy and readily froths on agitation. At this stage, also, a much more delicate test is a hitherto unobserved peculiarity in the reaction between ammonia and Nessler's solution. In fresh or non-deteriorating waters this reaction is indicated by a yellow or brown colour, according to the amount of ammonia present. Deteriorating waters react in the same way, as regards intensity of colour, but in them the shade is different.

This difference of shade is best seen when samples of the two kinds of water yielding the yellow colour are compared; in the fresh the yellow may be likened to that of the gold of an English sovereign, while in the deteriorating it is like that of the gold of an Australian.

At even a later stage, when ammonia has disappeared from the water, this test can be employed, after the addition of a little solution of ammonia to the water under examination.

The explanation of this test appears to be that the micro-organic action gives rise to some chemical substance, perhaps a ptomaine, which influences the reaction between ammonia and Nessler's solution in the way described.

I first noticed this peculiar shade in 1884, in examining a sample of rain-water which had undoubtedly produced enteric fever in the children at the coast-guard station where it was in use.

At a later stage than that marked by the presence of ammonia, nitrites are present. The presence of nitrites has been looked upon by most water analysts unfavourably, owing to their being generally associated with waters which have produced disease. The full significance of the presence of these salts in water has, however, been missed, from the conditions of their development not being known.

Now, by observations and experiments in the laboratory here, I have proved that nitrites are only found in waters undergoing change under the condition of insufficient aëration, and that they arise both from oxidation of ammonia and deoxidation of nitrates. Improper conditions of storage bring about changes of water under insufficient aëration, which is only another way of expressing deterioration in nature; on the other hand, under the conditions which generally affect water, ammonia passes into nitrates and nitrates into ammonia without the appearance of intermediate nitrites.

At a stage of deterioration when both the ammonia and nitrites have disappeared, a dark haziness is produced by distilling the water and Nesslerizing the distillate.

The next test is the application of the microscope for the detection of the larger organisms which grow in deteriorating water, and among these the principal are fungi.

The final test is the making of cultivation experiments to find out the richness of the water in micro-organisms. It is not possible yet to interpret exactly the results of these experiments, but I think it may be concluded, with regard to a given water, that the more micro-organisms it contains the less wholesome it is.

From the theory that the unwholesomeness of water is mainly due to deterioration, important deductions can be drawn—some theoretical, others practical.

Further light is thrown on the connection of disease with micro-organisms; but it is also evident that it may be often impossible to trace the germs which give rise to disease to their original source. For a few disease-producing germs which, carried by the wind perhaps for hundreds of miles, may have alighted on a body of water lying under conditions favourable to their growth, would be more powerful for evil than myriads of their fellows discharged into water under conditions such as exist in rivers. Thus, the germ theory of disease is strengthened, while at the same time the possibility of often being unable to discover the line of descent of the germs is shown. This latter fact probably accounts for the necessary existence of the pathogenic theory to explain the origin of certain cases of filth diseases.

Again, especially with regard to the origin of typhoid fever and cholera, the deterioration theory, applied not only to water, but to all putrescible substances, appears to bring into harmony the opposing germ and climatic views. For, since these diseases are due to micro-organisms, and since the growth of micro-organisms is very much influenced by the state of the weather, the appearance of the disease must, to an extent, be dependent on climate.

If possible, water for drinking purposes should not be stored, and if storage is a necessity, the best keeping waters should be selected, and the conditions of storage should be made to approach, as near as practicable, those which are found in nature.

With regard to selection, experiments show that waters which have been exposed for some time to the influence of the atmosphere in rivers and lakes keep much better than spring, deep-well, rain, and some condensed waters. Filtration, and no doubt boiling, lessens the keeping power of a water. It would, therefore, appear, by exposure to the air, water acquires a stability which it does not possess when it arrives at the surface of the ground, either from above or from below. As filtration and boiling tend to deprive it of this power they should only be had recourse to immediately before the water is used.

As to the conditions of storage. These should embrace the greatest amount of movement, the least elevation of temperature, and the freest exposure to light and air that it is possible to give the water. The fulfilling of these conditions would necessitate, in case of rain-water, an open-tank system of storage; and the only objection to this which should be entertained is the loss from evaporation.

Another important deduction in connection with the detection of deterioration is that stored drinking-waters, especially on board ship, should be frequently examined in order to watch their behaviour; and this is most necessary when from any cause the temperature of the water is raised, as on shore, by hot weather, and on board by the heat of the fires or going into lower latitudes. The tests which I have described constitute an easy way of accomplishing this object, and water which is found to be undergoing deterioration should be condemned as unfit for use.

HOW JONES WAS IDENTIFIED.—At Oxford College, England, a good deal of fun is poked at the Welshmen, who crowd to Jesus College, and are currently believed mostly to answer to the name of Jones. There arrived one evening at the porter's lodge a stranger, and a colloquy began as follows:—Stranger: "Kindly direct me to the rooms of Mr. Jones." Porter: "There are forty-three Mr. Joneses in College, sir." Stranger: "The man I wish to see is Mr. David Jones." Porter: "Twenty-one Mr. David Joneses in college, sir." Stranger: "My Mr. Jones has red hair." Porter: "Seven Mr. Joneses have red hair." Stranger (in despair): "This is very awkward. Mr. David Jones asked me to come and take wine with him." Porter: "Why didn't you tell me that at first, sir? Second staircase, ground floor, right. All the other Mr. Joneses drink beer."

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Our Medicine Chest.

"THE aim of using drugs is not so much to destroy diseases as to aid and assist the natural powers to overcome the disease-principle."—*Holland.*

ANY knowledge which adds to our information regarding efficient and harmless aperient drugs is always welcome. Dr. A. Macfarlane writes, in the *Lancet*, regarding the properties of senna pods. He says that an infusion of senna pods is almost free from taste and smell; certainly it is devoid of the characteristic odour and flavour of "senna." It appears to increase activity in the muscular movements of the whole gastro-intestinal canal, acting quite as much on the colon and rectum as upon the small intestine. It is, in short, a reliable evacuant, free from irritating properties such as cause griping and flatulence; and, if the experience of one case is worthy of mention, it does not appear to be excreted through the milk in the nursing mother, for in one such patient the child was unaffected by its use. Administered regularly for several nights in cases of intestinal torpor, it cleans the tongue, increases the appetite and digestion, and promotes natural evacuation of the bowels, so that the quantity taken requires to be decreased, and eventually it can be dispensed with.

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THE cases in which he has found senna pods most serviceable are those depending upon impaired muscular movements, from defective innervation, usually associated with flatulence and intestinal discomfort. They have also proved useful in cases of hæmorrhoids, or piles, and in constipation in children, as well as in the aged. Like all purgative medicines, the infusion acts better in some persons than in others, and also in the same person at different times; but, after a fairly extended experience of its use, he has not been disappointed in its utility in any one case, nor has he been annoyed by any untoward effects. It has afforded him better results than any other medicine he has yet used, exceeding in efficacy cascara sagrada; while its freedom from disagreeable taste is a strong point in its favour. The properties of the pods differ very considerably from those of senna leaves. The dose for an adult is from six to twelve pods; for the young and very aged, from three to six. They are best infused in a claret-glassful of cold water for six or eight hours. Mr. John Borland, F.C.S., late examiner in the Pharmaceutical Society of Great Britain, of the firm of Rankin & Borland, chemists, Kilmarnock, has kindly prepared for Dr. Macfarlane a plain and simple liquid extract of the pods, the dose being from half a drachm to a drachm in a wine-glassful of cold water at bedtime. It has little taste, and it is exceedingly certain in its action, while it possesses the advantage of always being ready for use. These remarks are of high value as an addition to the knowledge of mothers, nurses, and others.

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DR. BIDDER described, at a recent meeting of the Berlin Medical Society, a new method of treating boils by injections of carbolic acid. If the boil is a small one, he gives one injection of a few drops of a solution of carbolic acid (2 per cent.); if it is of medium size, two injections are given, the half or the whole of a Pravaz syringeful of the solution being used on each occasion. In the case of large boils, for example, half the size of a man's hand, Dr. Bidder injects at four different spots the contents of four Pravaz syringes half or wholly filled with a solution of two per cent. of carbolic acid. These injections are given only once. This treatment is strikingly successful. There is some smarting at the seat of injection at first, but the pain soon disappears, and the next day there is a marked improvement in the patient's condition. The inflammatory swelling subsides very quickly, and in eight or ten days even the largest boil is dispersed. By this plan no unsightly scars are left, a circumstance which in many cases is of considerable importance. The success of the treatment is probably to be accounted for by the fact that either the microbes which cause the disease are killed, or the medium in which they flourish is destroyed.

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MANY formulæ for disinfectant soaps have lately been given. The following is said to be one of the best:—Pulv. white soap, six hundred grammes (a gramme is about fifteen grains English); sulphophenate of zinc, fifteen grammes; ol. geranium rosat., fifteen grammes; tr. quillaya, twenty grammes; sat. sol. (in alcohol) of eosine, four grammes; glycerine, ninety grammes; aq. dest. q. s. The zinc salt is dissolved in twice its weight of water and mixed with the glycerine; the solution is then heated on the sand-bath, and the soap is added, together with enough of the water to make a soft mass. The tincture is then introduced, and afterward the eosine and the essence. The tablets should be wrapped in foil.

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INK and rust stains are removed easily by a solution containing ten parts each of tartaric acid, alum, and distilled water. The solution has the trade name "encrivoir."

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L. HOFFMAN, in a communication to a recent number of *Therapeut. Monatash.*, states that "Dr. Lassar gives the following prescriptions:—The capillary surface has to be soaped for six or eight weeks every day by a well-experienced hand, later less frequently, during a time of ten minutes. The best method will be by means of a tar soap containing an abundance of tar. After thorough soaping of the scalp, the soap is washed off, and after slight drying the head is rubbed with:—Sol. hydr. bichlor.,0·5—150·00; glycerini, spirit. cologn., āā 50·00. M. Then rub to dryness with absolute alcohol, with addition of one half per cent. naptha, and then." And here follow four additional compounds, all containing one or more well-recognized germicidal substances, of which the first, as above given, may be regarded as typical, which, considering the non-parasitic nature of the disease and the carefulness with which the scalp is directed to be washed, using tar soap daily for six or eight weeks, appear to us to be wholly superfluous, if, indeed, they are not likely to protract the cure by superinducing cutaneous congestion.

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Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

MEANS OF PRODUCING COLD.

Of the many uses of refrigeration during a torrid, sultry, tropical state of the atmosphere it is needless here to speak; those who work with gelatine plates, and especially those who have to manufacture them when the thermometer is in the vicinity of the nineties, appreciate full well the desirableness of being able to convert dog-day heat into hyperborean chill, and the great value of any means by which such conversion may be effected. The production of cold is merely the abstraction of heat from the body that is being operated upon. The means for effecting this have of late been undergoing advances towards perfection. It is only the other day since we saw in a well-heated manufacturing engineering shop a considerable quantity of mercury frozen quite solid while it was exposed to the warm atmosphere of the workshop. This, it must be admitted, indicates a high advance in the art of congelation.

Concerning methods of producing cold, there are three of which we shall here speak. The first is the well known one of imparting cold to water by dissolving in it certain substances, of which there are none which in our estimation can vie with nitrate of ammonia for general efficiency and undoubted convenience. In addition to this, it is also the most economical of all saline bodies, as it is not wasted during use, but may be employed over and over again. If a thermometer is placed in a tumbler of water, at say 50 degs. Fah., and some crushed crystals of the nitrate of ammonia are then thrown into the water, the column of mercury will be found to descend with singular rapidity until it reaches 26 degs. to 27 degs. below the freezing point, or about 5 degs. Fah. There are several mixtures which can be made by which a much greater degree of cold can be obtained, but these when once used cannot be used again. But with the ammonium nitrate it merely suffices to pour the solution out into an evaporating dish after being done with, and having driven the water off by heat, or otherwise, place the crystals into a bottle, when they are ready for future use in a similar way.

We here give an illustration of one way by which the knowledge of the above mentioned fact may be serviceable. We had once some gelatine plates to develop in a semi-tropical country at a time when the heat was intense and the water so warm as to endanger the film during development. We placed the developing solution in a japanned tin developing tray, and placed that tray inside of another slightly larger, and in the bottom of which we scattered a few crystals of nitrate of ammonia, afterwards pouring in a little water. This reduced the previously high temperature of the developer to one that could not possibly affect the too soluble gelatine of which the film was composed.

A second system for the production of cold consists in the compression of air. Thus compressed and forced into a reservoir, it becomes heated, as every one knows who is familiar with the working of an air-gun. But when cooled down again, before it is suffered to escape, its expansion is attended by great cold. "If when compressed it is allowed to cool down to the ordinary temperature, and then to escape, it will be cooled below that temperature just as much as it was heated by compression. Thus, if in being compressed it had been heated 100 degs., say from 60 degs. to 160 degs, and then allowed to cool to 60 degs., on escaping it will be cooled 100 degs. below 60 degs, or to 40 degs. below zero, which is the temperature at which mercury freezes." This is the principle of the cold air chambers now so extensively employed on shipboard for the transport of frozen provisions from Australia and New Zealand.

The ingenious photographer who dreads the preparation of gelatine plates in hot weather will, in this, discover the means by which he may be enabled to keep his coating room at fifty degrees or sixty degrees during the most sultry months of the summer, aided by a small gas or petroleum engine. We have devised a most perfect means of effecting this, by manual power if desired, and that only applied at occasional intervals, but a detailed description of it would be out of place in this article.

It is well known, by some at any rate, that the condensation of certain vapours is attended by extreme cold. On the principles actuating this phenomenon we do not here enter, but confine ourselves to giving a brief description of one of the machines—if machine it may be called—by which the principle has obtained its latest outcome. This apparatus, which has received the trade name of "The Arktos," consists, roughly speaking, of a tube bent ∩-shape, at the end of one limb being a reservoir which contains strong liquor ammonia. This ammonia should be as strong as possible; although that so well known among photographers as 880 will do, yet Mr. Loftus Perkins, the inventor of the apparatus, informs us that he prefers it much stronger, say 875, a strength he certainly manages to obtain. This bent tube has its air abstracted and is hermetically sealed, and heat is applied to the ammonia reservoir, by which the ammonia liquid parts with its gas. When the source of heat is removed and the gas re-enters the water, the cold is produced at the farther limb of the apparatus in a degree of such intensity as to cause a deposition of the moisture in the atmosphere in the form of dry snow. So great is the cold produced that, as previously hinted, we have seen, and that too, in a warm room, the solidification of mercury in the vessel into which the end of the tube was dipped. One end of this tube may be called the boiler, and the other the refrigerator, and a condition of success is that the connecting pipe between the two shall be kept cooled while the boiler is being heated, so that all gas passing to the refrigerator may enter it in a comparatively cool state. When this is used on a large scale, it suffices that a fire be applied for two or three hours once a day, by which the refrigeration is rendered singularly perfect. There are minor mechanical details connected with this apparatus, but the general principle is as above stated.

Thus is solved the problem of a process for attaining cold and ice without mechanical aid, and as the inventor says, "Its abounding efficacy is made evident in its freezing of mercury in the open air."—*British Journal of Photography.*

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For Stiff Necks and for Swellings occasioned by the Evil.

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If a little be well rubbed in for a few minutes on a Bruise or Pinch, it will prevent Blackness. Will also cure Scalds and Burns, applied directly; and Rheumatic and Gouty Pains fixed in any part.

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HUMAN TAILS.

By E. Rabaud.

Naturalists have, up to the present time, given little attention to the study of tailed men. Such an organ has simply aroused the curiosity of any one who has seen a specimen, quite as a bearded woman arouses interest in a dime museum. The works on this subject are very incomplete, a few lines here and there scarcely throwing any light on the subject. There is one monograph on this subject. There are few documents on the subject, the monstrosity is seldom found, and few of the well known cases could bear a close scrutiny.

A number of travellers in South Africa have testified to the existence of men of the Nyams-Nyams tribe who had tails. This may or may not be true. If such is the case, Mr. Quatrefages does not consider that the evidence to that end is very trustworthy, and rather comes to the conclusion that it has not been absolutely proved, although he believes the fact not improbable. Mr. Ecker, on the contrary, after examining this subject thinks that the testimony of explorers is credible.

Although there may not be a race of human monkeys, it must be admitted that there are some cases of individuals having a caudal appendage. When I say "some" cases, it should be understood that Pliny and Ptolemy, and after them Marco Polo, Strup Maillet, and others, speak of this anomaly, and their citations would comprise in all not 15 or 20 cases, but from 150 to 200. The well-authenticated cases, however, are very few in number.

Bartels enumerates and describes twenty-one cases, which he classifies as: 1. Tail connected with body. 2. Tail with free movement. 3. Cutaneous prolongation. The first includes the triangular base bone unusually developed, and which extends to the anus, and partially covers it. The second includes those tails that form a sort of projection at the back, and which separate from the body at the sacrum. The third will not be reviewed, as it does not seem necessary, as it could take either of the other forms mentioned and still be simply a cutaneous prolongation.

The specimens already observed enable us to give a general description, which will be done, however, with due caution. The tail is conical or spherical in shape, rarely cylindrical. The end nearly always curls slightly, and sometimes is twisted like that of a pig. It is seldom more than three or four inches in length. It is sometimes covered, and sometimes it is quite smooth. In the former case the hair grows in places, and resembles somewhat the tail of a cow. Bartels cites and has shown a case of this kind, while Quatrefages, who lived before his time, has considered this condition as a mere legend.

Whether these tails are soft or rigid, they possess in general no movement of their own. This physical peculiarity is usually accompanied with some other defect, with *atresia ani* in particular, and almost always with general constitutional weakness. Such are the general characteristics of this class of monstrosities. Can the cause of this be discovered? *Adhuc sub judice lis est.* Bartels considers that it is due to imperfect development, induced perhaps by inheritance from an ancestral type, while Quatrefages had not believed in this, but considered that it was caused by some abnormal development in the embryo. It is not for us to decide which theory is to be accepted. It is a curious circumstance, however, that this peculiarity is found principally among the male species. I do not think that the females of the lower orders are less favoured in this respect than the males. It is also curious that the white races appear not to be privileged in this respect. If we admit that they are a superior race to others, then perhaps atavism would explain it. In none of the cases that have been examined, however, could vertebræ be found in the tail; while the specimen that was dissected by Virchow simply consisted of fat and muscles. Atavism (or race-likeness) would explain alone the existence of an hereditary monstrosity.

The question of heredity was, at an early day, discussed by Mr. De Quatrefages. He came to the conclusion that such an organ, whatever its origin might be, could be transmitted from father to son. Such a conclusion is affirmed in the cases of other monstrosities in which this is found to be the case. One remarkable instance we will here refer to, a young Moï, twelve years of age, who was taken to Saigon some time ago, where he was examined and photographed. Although so young, his tail was already nearly a foot in length. With the exception of its great length, this specimen resembled in almost every other respect those that had been examined by Bartels. From the information we have been able to procure, it appears that the organ is soft and smooth and has no bony frame. Bartels cites only four cases of this kind, while its cylindrical shape appears to be very rare. We stated above that, as a rule, this peculiarity was accompanied with other malformations, and such is found to be the case in the present instance. The shoulder blades seem to project abnormally, but it should be borne in mind that the subject is very thin.

The tail seems ordinary, and possesses none of the peculiarities described by Mr. De Quatrefages. He decribes tails two or three inches in length, while Bartels describes them as long as five inches; but this young Moï's tail is about ten inches in length. Therefore, up to the present time this is the best specimen on record. This matter ought not to be passed over carelessly, but it merits a thorough and complete investigation and study which should be no longer neglected.

Sicilian Sulphur.—Mr. Consul Stigand, writing from Palermo, reports both an increase of production and decrease of the selling price of sulphur produced in Sicily. The export in the year 1846 was only 70,000 tons; it has lately risen to more than 300,000 tons. At the same time crises have confronted those engaged in its production and export. As is well known, iron pyrites contain a large proportion of sulphur, and this it is which, when liberated from the iron, and properly treated, produces artificial sulphur, sufficiently good to compete with the best natural product. The depression reported from Sicily has become a proprietors' question, just as the agricultural depression in England and Ireland has become a landlords' question. It seems that the royalties on the production of the sulphur mines in Sicily average about 25 per cent. of the output, which amounts to an enormous rent and overshadows the producers' profits. Sometimes a mine begun under one estate becomes workable only under the soil of another proprieter, and as each proprietor has a right to all minerals found beneath his land in a vertical direction, a mine may thus be subjected to a double or even a treble royalty. Moreover, the mines cannot be worked cheaply for want of cheap fuel and the absence of railway communication. Horse-pumps and hand-pumps are used on the spot, and the sulphur itself cannot be treated economically without fuel. Thus it is that an anomaly is presented of a district rich in natural sulphur being subjected to severe competition from districts far less favoured naturally, but having the advantage of cheap fuel and perfect appliances.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Genius, Mania, and Crime.—While it is fully recognized by medical men that genius and insanity are sometimes curiously intertwined in the same person, or are displayed in closely connected members of the same family, it is not so easy to trace the connection between these mental conditions and those sinful or criminal acts which are apt to be committed by persons so organized. The medical profession recognizes forms of affection or moral insanity in which the capacity to govern the emotions is in abeyance. In this phase of mental disease a marked feature is the absence of delusions; hence the conflict of opinion between the medical and legal aspects which often arises where the question of criminality has to be taken into consideration. A person is often tried and condemned by the law, but is exonerated and protected by medical judgment which is permitted to supersede legal judgment. Thus the condemned criminal escapes the gallows, becomes an object of pity and commiseration, is protected by and at the expense of the State, and saved henceforth from further harm to himself or others. He may have been—nay, indeed often is—a person of the highest talent or even genius. The Rev. William Dodd, a canon of the Church, the unfortunate English divine who was executed on the 27th of June, 1777, for forgery, after trial at the Old Bailey, is an instance in illustration of the insufficiency of the law acting apart from medical judgment, which unfortunately in those days had not acquired the authority it now possesses. In our day, where doubt exists the law leans to the side of mercy, that quality which is "twice blessed." Where the acts of the subject of moral mania are criminal, the question of his responsibility is settled with much difficulty, even when, as in such cases, every opportunity of investigation is afforded. How much more difficult, then, must it be to arrive at a right judgment in those cases of moral mania where the acts are sinful but not criminal. The law does not come to his rescue. He is not the subject of delusions, yet his acts are the acts of "madness, not badness." He may inflict on himself the punishment of degradation and ruin, and life-long misery on those previously near and dear to him. He bears the scorn of former friends, and in his lucid intervals feels it keenly. But when the impulse is on him, nothing but the absolute control of others is sufficient to check his wayward career. The influence of religion may have some weight on him, but unfortunately it is too frequently the case that the strongest faith is inadequate to stay the downward course. Men are apt to judge their fellow-men uncharitably, and to deal harshly with them, believing them to be capable of exercising restraint over themselves, while all the time nothing short of enforced restraint and medical treatment can avail.—*Lancet.*

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Science and Wrinkles.—By a polite fiction, ladies are assumed to be permanently young until they themselves have voluntarily renounced their claims to juvenility, and have lapsed of their own accord into the category of "wall-flowers." The wrinkle, however, ruthlessly ignores this courteous convention. It is a persistent truth-teller, and, though as inveterately dumb as the Pryamid of Cheops, will have its silent say, unwelcome and uncalled-for as that voiceless denunciation may appear. It cannot be pulled out like a treacherous grey hair, or a faulty front tooth: to dye it is futile; pigments, while temporarily filling it up, betray its existence to the observant eye. When it settles down, so to speak, on some physiognomical point of vantage—say at the corner of a rosy mouth, or on the smooth tablet of a white forehead, or in the delicate purlieus of "the flashing orb of sight"—it is fraught with an inauspicious announcement that has hitherto been considered as unalterable as Fate. "Age with his stealing step," the intrusive wrinkle mutely remarks to its personal proprietor, "hath clawed you in his clutch," or at least has signified his intention of so doing by an unmistakable sign and token. The spring-time of life is over, and the summer-tide is waning fast: autumn, the chill harbinger of icy winter, is near. Like misfortunes, moreover, wrinkles "come not single spies, but in battalions." They will not be denied; they come, and, what is worse, they stay. Such has been their inconsiderate line of action from time immemorial until the present day, when science—grown weary of their inroads, as it would appear—has resolved upon their extirpation. By those who "double our joys and halve our sorrows," in particular, the news conveyed to us will assuredly be received as pleasant and promising tidings. Some ingenious experimentalist, it seems, has recently made the discovery that wrinkles can be obliterated by electricity. The process by which this marvel is affected has been christened electrolysis, and is practised at a Parisian establishment rejoicing in the impressive title of the "Dynamodermic Institute." There, according to Dr. Vernoy, who has just expounded the capabilities of electrolysis to the French public, rejuvenescence now awaits the furrowed belle or dandy "between two ages," at least as far as the smoothing out of dermical surface-irregularities is concerned. Sempiternal beauty being incompatible with a seamy skin, science has discovered a way of making the facial "rough places plain" by bringing electrolysis to bear on wrinkles "wherever found." Through the magical agency of electricity the most worn-out epidermis is put in thorough repair, being "nutrified and revivified" until it rises up into its proper place and recovers its pristine hue and gloss. The whole surface of the skin—so, at least, it is asserted—becomes as smooth under this treatment as that of a "young person full of bloom and beauty." In a word, the moribund cuticle undergoes resurrection, is ridded of its imperfections and infirmities, and starts afresh, in all its original youth and vigour, on a gay career of comeliness. This transformation is achieved by an operation, or series of operations, which has the relative merit of being painless, although Dr. Vernoy frankly admits that it is "disagreeble to the patient," and the beneficial effects of which are "warranted by competent medical authorities." What may be the approximative amount of outlay it involves is not at present stated. A method of removing wrinkles should, we would suggest, be charged for by results; or a scale of fees might be equitably framed on the principle of so much per obliteration, in proportion to the length and depth of the wrinkle effaced. It would be but fair in aggravated cases, calling for the removal of several thousand old and firmly-established wrinkles, that the electrolysian's remuneration should be cumulative, the complete restoration of a face in such an advanced stage of complicated deterioration being obviously of so much more importance to its owner than the mere rubbing-out of one or two casual and premature creases could possibly be to a younger person. The profits on an operation of this class, indeed, would in all probability be so lucrative that a precocious wrinkle—especially if

imprinted by sorrow or disappointment on the cheek or brow of youthful beauty — might be eradicated at an almost nominal charge, and the elimination of a single "crow's-foot," there being always a prospect of "more to follow," might be effected for a sum not exceeding the amount of a fashionable hairdresser's fee. Rich *ci-devant* belles would surely grudge no expense to recover the charms of a velvety skin and a ruddy complexion; and the cost of repairing the damaged epidermis of many a poor young beauty might be in great measure defrayed out of the lavish honoraria paid for superficial rejuvenescence by the wealthy aged.—*Daily Telegraph.*

Water-Supply of Paris.—A Paris correspondent says that a great danger to visitors to Paris is due to the insufficiency of the water-supply. Paris is in a most unfortunate position. It cannot be said that the water-supply is bad. On the contrary, at immense cost, Paris has secured one of the best water-supplies enjoyed in any town of Europe. According to the last report, Paris was receiving 121,000 cubic metres of the Vannes water, 21,000 cubic metres derived from the Dhuis, and 5,000 cubic metres from the St. Maur springs—in all, 147,000 cubic metres of pure and excellent spring-water. This, however, is not enough. The daily consumption is estimated at 158,000 cubic metres. The deficiency is not very great; still it is enough to compromise the whole town; for, when the store of good water is exhausted, the Seine water is provided, and this through the same channels and without warning. Thus, though a person may, as a rule, drink wholesome water, he will receive for a week or so during the course of the year water taken from the Seine, which is very likely to be contaminated. Again, a person may drink a glass of water in one quarter of Paris which is perfectly pure, while in another district he may, on the same day, get water that is certainly not free from the occasional presence of injurious organic matter. At the present moment, the supply of spring-water having reached a low ebb, the Seine water is turned on in four arrondissements. For twenty days these unfortunate districts are to receive only the Seine water; then three other arrondissements are to be served in the same way. In the pavilion of the prefecture of the Seine, situated in the central court or garden of the Exhibition, will be seen three glass tanks of water side by side. One receives the water of the Ourcq Canal, another of the Seine, and the third of the Vannes. The first two are more or less opaque, are of a green-yellowish tint, and vary more or less in aspect from day to day; but that which contains the water of the Vannes is always perfectly transparent, and never changes. Members of the Municipal Council have urged, so far in vain, that the water-supply should be increased. There are numerous projects, and recently a resolution was passed by the Council, calling upon the legislative chambers to discuss at once the scheme for bringing the waters of the Avre to Paris. That the Seine water may be dangerous will be obvious to all who are acquainted with the neighbourhood of Paris. The intake for the supply is, of course, outside the town, and some little distance up the stream, but it is unpleasantly near the large manufactories of *poudrette*, or human guano. Also there are boats containing tanks which are filled with the contents of cesspools, and the manure is thus conveyed up the river to the works. A few years ago some scavengers, in their impatience to finish their day's toil, instead of conveying all the soil the barges contained to the works, simply threw a considerable portion over into the river. Fortunately, this was discovered; and now there is a service of inspection organized both day and night, and careful watch is kept that these tank-barges should not again contaminate the water. But there are other causes of pollution, and it is an undeniable fact that many outbreaks of typhoid fever in Paris have occurred about a fortnight after the substitution of Seine water for the usual and pure supply of water from the Vannes or the Dhuis. The question of water-supply is a very serious problem, which the French authorities should lose no time in settling.

Art and Disease.—The evidences furnished by the mosaic of the Cathedral of Lescar, and by an ancient pottery excavated in the gardens of the Cluny at Paris, that wooden legs were long ago used, even by warriors, to supply the loss of part of the limb by gangrene or accident, are interesting, as well as the reproduction of the fresco by Taddeo di Bartholo, representing the care of the sick by monks in the Hospital of Sienna in the fourteenth century. Graphic accounts are given of the scourges which afflicted humanity in the Middle Ages—namely, syphilis, leprosy, and the black plague. The first of these diseases sprang up in Europe in the fifteenth century, and spread, in the form of a violent epidemic, simultaneously in Italy, Spain, France, Germany, and England. How deeply this terrible scourge affected the imagination, and how severe was the form of the disease, is shown by a picture of the fifteenth century, and attributed to Mathias Grünewald. A nude figure, half covered by a monk's hood and cloak, is seen writhing in agony; the body is covered by tubercular syphilides, the nose and ear are eroded, and the left arm is reduced to a stump; but though the artist has thus faithfully reproduced the pathological symptoms of a victim of the epidemic, he also seems to suggest by the substitution of human feet by webbed bird's claws, and by the attitude of agony and despair, the representation of a demon or one of the damned. Two illustrations of leprosy are given, one by Holbein, and the other by Albert Durer; in these pictures, however, the masters have made human pity take the largest share in the spectator's mind, which the loathsome disease only serves to set off. In the leper of Durer, our authors recognize the atrophic form of the disease, and that peculiar progressive muscular atrophy which 300 years later was accurately described by Duchenne. The black plague has happily become so entirely a thing of the past, that its pathology has been forgotten; but the classic description by Boccaccio of the scourge in Florence in 1348 will live as long as literature is preserved. The violence of the attack of the disease, the abscesses that formed in the inguinal region and the axilla, the anthracic patches on the body, the agonies, the thirst, the pestilential odour, and the rapid mortality, as well as the loss of natural affection, and the efforts of the doomed to snatch a false joy from life while it lasted, are all described with an unsparing pen and pencil. No Pasteur had then arisen to track the fatal microbe to its hiding place, and to find a mithradatic antidote; the plague pursued its course unchecked, slayed its hundreds of thousands in every city, and left no trace after its hetacombs of dead had been gathered to the earth, but the wail of the poets and the vivid depictions of tragic scenes by the artists of the day. The ravages made by the black plague are illustrated from pictures by Raphael, Nicholas Poussin, Pierre Mignard, and de Troy. —*British Medical Journal.*

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Dr. H. A. ALLBUTT, M.R.C.P., 24, Park-square, Leeds, writes, Oct., 188[illegible]:—"I always recommend with confidence MR. PULVERMACHER'S BELTS. Ladies recovering from illness incidental to their sex will find these BELTS of vast assistance in restoring lost nerve power."

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[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor*.]

[Owing to several complaints which of late have reached us regarding delay of replies in this page, we beg to direct our correspondents' attention to Rule 6 "for correspondents," given on p. 366. Every effort is made to insert replies at the earliest possible date, but occasional and heavy pressure on our space renders it impossible at all times to find room for our answers. Delayed replies are invariably given in the number for the succeeding week.]

ALPHA.—We should advise in the case you name that the girl be kept from school and from all mental exertion for some time. Simply watch the general health. Give warm baths at night, if there is any pain, and try a little Chemical Food after meals, in water, thrice daily.

STELLA.—1. A good brand, certainly. 2. After breakfast. 3. Yes, if he was not called upon to perform any heavy work.

A. HELEN W.—Try the effect of bathing the hands and arms night and morning in tepid salt water; and take after your meals fifteen drops of Fer Bravais in water, twice daily. Let us hear the effect of this advice.

MISERY.—Why do you not carry out the rules for healthy living given in the pamphlet you have read? You probably suffer from constipation. Follow the advice given in the pamphlet as regards diet, cold sponging, &c., and you will get quite well. Beware of quacks.

EDINBURGH.—If you have really been suffering from the serious disease you name, the falling out of your hair will not cease until you are cured; but from your description of your treatment, we should say you are mistaken as to the disease in question. Meanwhile, you cannot do better than follow the advice given to "E Banner" in last week's HEALTH.

CRAIGALAW.—You must take your child to a competent physician at once. The symptoms are too serious to be neglected; and only a doctor can determine the cause and cure of the child's ailment, after a personal examination of the case.

M. J.—Certainly: you could not do better than follow out the instructions laid down in the pamphlet. As you are in good health you need have no fear; simply live plainly, according to the rules laid down in the book you name.

OAT FLOUR.—The simplest method is that of consulting a good dentist in Liverpool, and of having removable teeth fitted in. Artificial teeth should always be capable of being removed and cleaned. If you neglect to provide yourself with artificial teeth, you will incur the danger of dyspepsia, from imperfect mastication.

PHYSICIAN.—We suggest washing the woodwork of the infested place with very hot water and carbolic soft soap, and then dosing all the crevices again with Keating's Insect Powder. See, of course, that thorough cleanliness as to clothes is maintained.

AFFLICTED.—Your case is one in which only the advice of a competent eye-surgeon can be of any service. Visit Leeds Infirmary, and take the advice of the eye-surgeon attached thereto. You will certainly require measures to be taken for preserving the sight of your remaining eye.

A. H. F.—You ask us a question very difficult to answer. All we can say is that you must be guided by your own feelings in the matter. It is not likely that you would incur any harm by the procedure you name, but the effects of unwonted or excessive stimulation would require to be carefully guarded against.

W. JOHNS.—A quack decidedly; he figured in a police-court in Manchester some time ago. Read the pamphlet, "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and you will find full information in its pages.

ULIANA.—1. One side is naturally always larger than the other. If the enlargement is excessive, consult a surgeon. 2. Read the pamphlet recommended to "W. Johns" above. What you name is only natural. 3. A symptom of nerve-exhaustion. Take the tonic recommended to "Grange" in last week's HEALTH. Use Inman's Syrup of the Hypophosphites as advertised in our pages.

LENA.—The wash will do no harm if used occasionally. If used frequently, it may bleach the hair or render the hair brittle.

G. GIRLING.—Apply to your druggist, and tell him to order the soap from Burroughs, Wellcome & Co., Snow-hill-buildings, London, E.C.

W. P.—Try Vinolia as an application to the irritated parts (Roberts & Co., 76, New Bond-street, London, W.); but if any pustules appear, you probably have acquired itch, and to cure it, you must use sulphur ointment regularly, and attend scrupulously to the cleanliness of your clothes and person. Bear in mind that itch is a contagious disease, and the little mites causing it pass from one person to another by contact. You should also have a warm bath at night, and if the itching appears on the body at large, smear yourself with sulphur ointment, and sleep in the same sheets till you are cured.

UPSET.—You need not alarm yourself; what you name has no connection at all with your ailment of 1885, but is simply a natural secretion. Read the pamphlet recommended to "W. Johns" above. Pay no attention whatever to the matter.

SCOTSMAN.—Look to your diet, and avoid late suppers and constipation by the use of the diet recommended to "Otto" in last week's number. What you name is of no real consequence at all, and you only exaggerate the effects by worrying about them. For the hair, try the lotion recommended to "E. Banner" in our last number.

C. EAGLESHAM.—1. Pulvermacher's will suit your case exactly. Apply at 194, Regent-street, London, W. 2. Yes.

GIPSY.—Give the Soden Mineral Pastilles a trial. They are excellent all for throat-ailments.

FAVOURITE.—Try fifteen drops Fer Bravais taken in water between your meals, thrice daily; and at night inhale the vapour arising from a pint of very hot water, to which Sanitas Fluid has been added. It is probable a teaspoonful of Scott's Pure Cod Oil Emulsion, taken thrice daily, after food, would assist your cure.

A. SPENCE.—Try applying a lotion night and morning, consisting of one part Hazeline added to two parts water, or the Hazeline may be used undiluted, if not successful when mixed with water.

VIGO.—Have a Xylonite Truss fitted by the Medical Battery Company, 52, Oxford-street, London, W.

DORA.—The following is a suitable cough mixture:—Chlorodyne, one drachm; ipecacuanha wine, one drachm; syrup of squills, one drachm; glycerine, to make up two ounces. Label: "A teaspoonful in a little water at intervals."

N. E. M.—The Medical Battery Co., 52, Oxford-street, London, W., will aid you in your inquiry. Apply to them.

S. B. C.—Horsford's Acid Phosphate may certainly be tried by you. It is an admirable tonic.

KILMO.—You suffer from "blackheads," which are filled-up skin-glands. Press out the matter from the glands, and then sponge the parts with a little of Bayley's Eau de Cologne. They are an evidence of defective skin-action. Take warm baths, use brisk friction to the skin, wash with Bayley's Soap, and avoid excess of fatty foods.

F.G.S.—Inject twice or thrice daily with tepid water in which a few crystals of permanganate of potash have been dissolved, so as to give the fluid a light claret colour. Gradually reduce the strength of this fluid to a very light pink.

EDEN.—To prevent boils, try the following: Sulphide of lime, twelve grains; sugar of milk, half an ounce. Mix. Take as much of this powder as will lie on a sixpence every four hours.

AN AFFLICTED ONE.—You only exhibit your utter ignorance (pardon our speaking plainly) in your last letter. What *you* think to be "worms" are simply the matter which fills up the skin-tubes, and which, when pressed out of these tubes, assumes a worm-like shape. If you were a regular reader of HEALTH you would have been instructed in this fact long ago. Read HEALTH No. 199, and attend to what is said therein about blackheads and acne. "Blackheads" are the tube-materials just named, with a dust speck on the top.

J. CARTWRIGHT.—Read the article on "Blackheads and Acne" in HEALTH No. 199, to be had from the Publisher, and you will find full details of treatment therein. The prescription you send is not adapted for the cure of your ailment.

SUFFERER.—Your troubles are all exaggerated by your own introspective and subjective mental habits, and so long as you continue to brood over your fancied ailments, so long will you be miserable. You may not be naturally robust, but your condition is only one of slight debility, made chronic by your own mental practice of dwelling perpetually on your symptoms. Our advice to you is to take a tepid (not cold) bath every morning as a nervous sedative, and, after meals, to take a teaspoonful of Inman's Syrup of the Hypophosphites in a wineglass of water, twice daily. Take plenty of out-door exercise, and do not dream of taking the step you name till you have fully recovered your tone.

W. D.—Try Vinolia, applied night and morning, for the itching, and wash the affected parts with Vinolia (Medicated) Soap regularly. Internally, try the effect of taking the tonic ordered to "Sufferer" above. If not cured, write again.

JACKANAPES.—Why should you desire a "cure" for what is only a symptom of health and vigour, and not a disease at all? Do you suppose what you name is unnatural under the circumstances? Try plenty of out-door exercise and healthy recreation.

LEADHILLS.—Try a hot hip-bath at bed-time. The use of a good liniment is also to be recommended. Rub over the seat of pain a little chloroform liniment, morning and night. The simpler plan of applying a hot flannel cloth wrung out of hot water and sprinkled with turpentine is also useful.

EDGAR.—Use the "Pommade Trichophile" of the French Hygienic Society, 6, Conduit-street, Regent-street, London, W., (advertised in our pages); it is an excellent remedy for scurf. Wash the hair once a week with Bayley's Soap.

LOAD.—The following may be used for the cure of freckles: Sulpho-carbonate of lime, two ounces; glycerine and rose water, of each twenty-five ounces; alcohol, five ounces. Mix. Wash the skin twice in twenty-four hours, letting it remain damp with the lotion for half an hour.

FRANK HARDIE.—Take Cascara Cordial, twenty drops in half a wineglass of water, or a Tabloid, once or twice daily, an hour before meals; avoid fatty foods, and let your diet consist of Grant's Oat Flour, milk, milk-puddings, white boiled fish, meat (occasionally only for a time), stewed fruits, stale bread, &c.

C. S.—Purchase Cassell's "Family Physician" as a suitable manual.

MARY F.—Superfluous hairs can only be satisfactorily removed by electrical means. Read the article on this subject in HEALTH, No. 149. We can send, if desired, on receipt of stamped addressed envelope, address of a specialist who removes hairs in this way.

FRANK.—Apply at night to the corn some salicylic cream by way of softening the skin-tissues, and then cautiously pare the corn in the morning. Repeat this process as often as needed, and, above all, beware of wearing thin stockings. Wear a woollen sole inside your boot, to avoid pressure on the corn, or wear thick stockings, and examine your boots. One pair of boots is often found to cause corns, whereas another pair relieves them.

E. COLLINS.—Read the pamphlet, "A Lecture to Young Men" (post free, 5th Edition, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and you will find full details suited to your case.

B. CHASE.—Try fifteen drops Fer Bravais taken in water between your meals, thrice daily; and at night inhale the vapour arising from a pint of very hot water to which Sanitas Fluid has been added. It is probable a teaspoonful of Scott's Pure Cod Oil Emulsion, taken thrice daily, after food, would assist your cure. Write again, if not bettered.

E. M. M.—Try the effect of dusting Woolley's Sanitary Rose Powder on the feet, under the armpits, &c., after washing.

ALGOA BAY.—For your hair-weakness use the following lotion: Solution of ammonia, half an ounce; tincture of cantharides, half an ounce; eau de Cologne, one ounce; water, to eight ounces. Rub into the roots night and morning with a soft sponge.

A. MARKS.—The skin is deficient in its action. Try the Oriental Aromatic Salts (advertised in our pages), which should be added to the water with which you wash. Use Bayley's Spermaceti Soap, 17, Cockspur-street, Pall-mall, S.W.

L. M.—Try the following: Bicarbonate of soda, one drachm; glycerine, an ounce and a half. Mix. Apply the lotion after washing. If this lotion does not cure you, substitute for it the following: Pulv. calamin. ver., two drachms; pulv. oxid. zinc, one drachm; glycerine, half an ounce; aquæ camphor. ad., six ounces. Mix. Label: "For external use only."

G. P.—A depilatory is made as follows: Sulphide of sodium, three drachms; lime, ten drachms; starch, ten drachms. Make a paste with water; apply to the skin for two minutes only; then scrape off. To be used with care. But you should note that no depilatory will prevent the hairs from growing again. Electricity alone can permanently remove hairs. Read article in HEALTH, No. 149.

LENT.—Himrod's Asthma Cure, which is used by inhaling the vapour arising from the substance when burned, should be tried by you. Savar's Cubeb Cigarettes, used by bringing the smoke down the nostrils, are also useful.

E. LISTER.—Wear very large and roomy boots, and cover the bunion with soap plaster spread on kid or wash-leather. A good lotion is that made by adding two drachms tincture of arnica to eight ounces of water. This lotion should be applied on lint, covered with oiled silk to prevent the lotion from evaporating, and should be continued for two or three days at a time. The tincture of veratrum viride painted on a bunion, if inflamed, may do much good. If the first of the above remedies does not do good, then try the others in turn.

E. F. GRAVES.—Try the following ointment:—Hydrarg. ammoniat., ten grains; Bismuth. subnit., one drachm; Liq. carbonis deterg., one drachm; lanolin, six drachms. Mix. To be applied night and morning.

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